Rational Synergy for Rational Team Concert Interface 1.2
Installation and User's Guide

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1 Introduction

This document describes integration between Rational Synergy and Rational Team Concert (RTC) where Synergy tasks can be linked directly to RTC work items, work items can be displayed, queried and linked from inside the Rational Synergy client.

Enabling the integration requires two steps:

- Install Rational Synergy 7.2.1
- Install the Rational Synergy for RTC Interface 1.2, which has several components that must be installed individually.

2 System Requirements & Installation Instructions

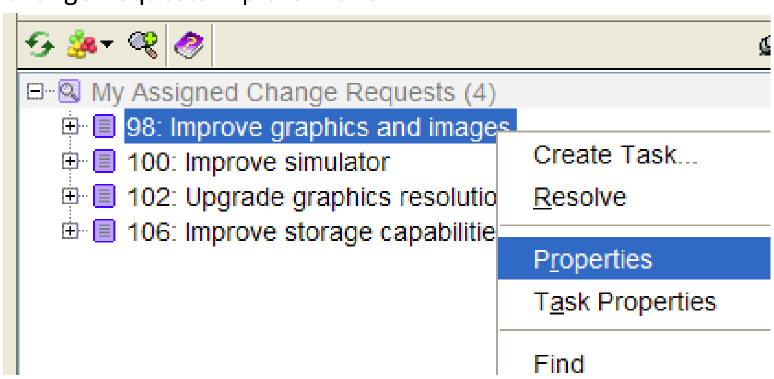
Refer to the document "**IBM Rational Synergy for Team Concert Interface 1.2 Readme**" for system requirements and installation instructions.

3 How the Integration Works

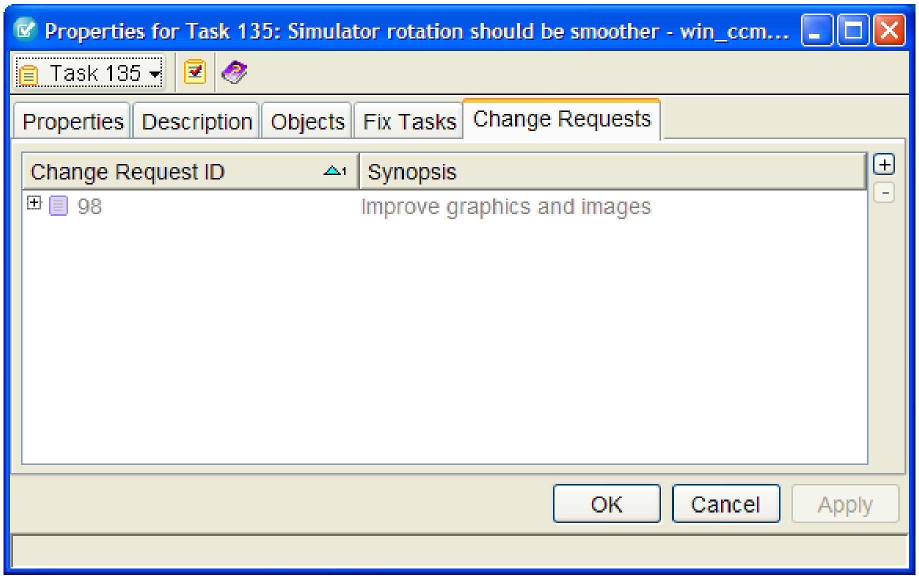
3.1 Rational Synergy

Once this integration is enabled on the Synergy client, RTC work items will be reflected in place of Rational Change change-requests. For example:

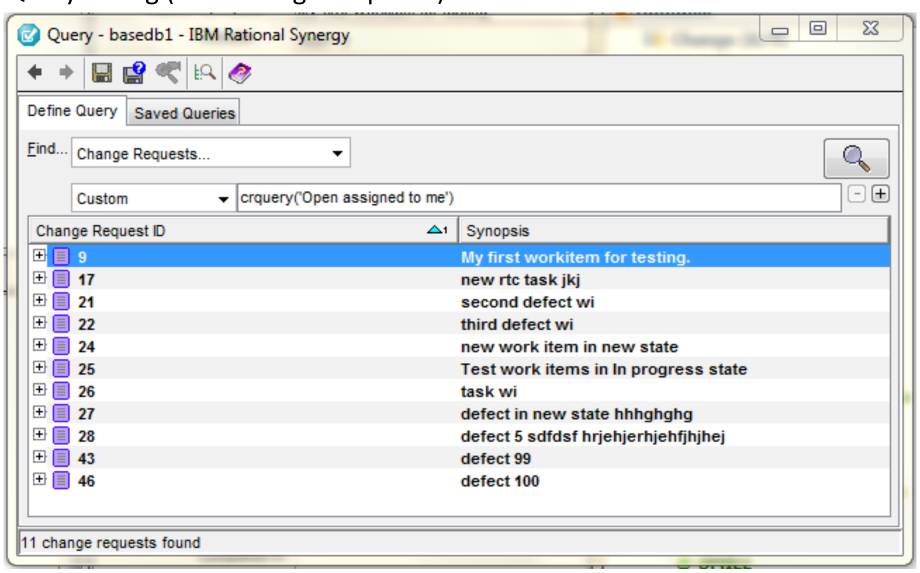
- Change Requests Explorer Pane



- Change Request Tab on Task Properties Dialog



- Query Dialog (Find Change Requests)



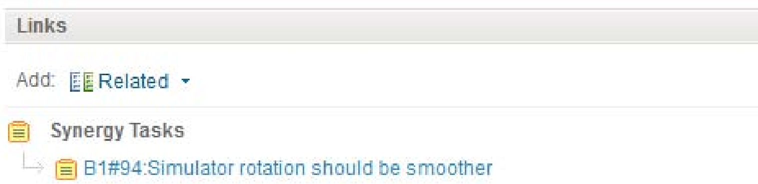
The appearance of the Rational Synergy client was not changed at all for this integration. Because Rational Synergy tasks can be linked with both Rational Change change-requests and RTC work items, no labels were modified. "Change Request" is considered as a generic term that can refer to either a CR or work item.

To distinguish work items from Rational Change change-requests, an attribute (pseudo-attribute) called `cr_tool_displayname` can be displayed, which will display "Change" or "RTC". Since a single task may be linked to work items and Rational Change change-requests, it is useful to add this attribute as a column in views such as, Change Request Tab on Task Properties Dialog.

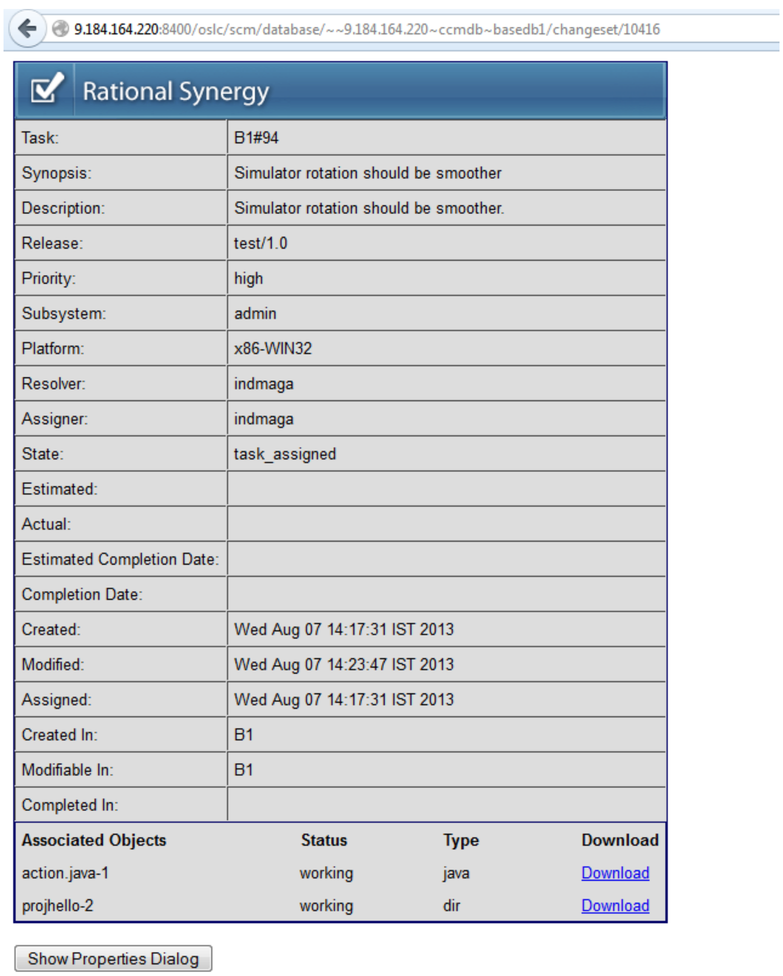
3.2 Rational Team Concert

RTC work items stores OSLC URLs of linked Synergy tasks. If the link is followed, post the authentication and web dialog showing Synergy task properties and associated objects with the task is displayed. From the task properties page, user can open Rational Synergy rich client by clicking the “Show Properties Dialog” button. To bring up the task properties dialog from the web dialog, the user must have the Rational Synergy client installed locally.

- Example -RTC work item displaying linked Synergy tasks:



- Example - Task properties web page:


9.184.164.220:8400/oslc/scm/database/~~9.184.164.220~ccmdb~basedb1/changeset/10416

Rational Synergy

Task:	B1#94
Synopsis:	Simulator rotation should be smoother
Description:	Simulator rotation should be smoother.
Release:	test/1.0
Priority:	high
Subsystem:	admin
Platform:	x86-WIN32
Resolver:	indmaga
Assigner:	indmaga
State:	task_assigned
Estimated:	
Actual:	
Estimated Completion Date:	
Completion Date:	
Created:	Wed Aug 07 14:17:31 IST 2013
Modified:	Wed Aug 07 14:23:47 IST 2013
Assigned:	Wed Aug 07 14:17:31 IST 2013
Created In:	B1
Modifiable In:	B1
Completed In:	

Associated Objects	Status	Type	Download
action.java-1	working	java	Download
projhello-2	working	dir	Download

Show Properties Dialog

3.3 Using Synergy with RTC and Change

There is a notion of a single “active change request tool”; this is the tool where queries will be run.

However, Rational Synergy database can contain both Rational Change change-requests and RTC work items. Rational Synergy distinguishes Rational Change change-requests and RTC work items and provides all normal operations on them. For example, opening a work item will open RTC and opening a CR will open Rational Change. Synergy tasks can be associated to change requests from both RTC and Rational Change, so under the “Change Requests” tab of task properties, all associated change requests are displayed together and the user can still operate on them.

3.3.1 Change Requests from Rational Change

The change requests managed by Rational Change are unaffected by RTC integration. When configuring the Rational Synergy database to use RTC, no update of this data is required. Rational Change change-requests continue to have a `cvtype='problem'` and all objects with that cvtype are managed by Rational Change.

3.3.2 Change Requests from Rational Team Concert

Change Requests for RTC use reference objects, as previously described. A Synergy database can be connected to a single RTC project-area.

3.4 Proxy Objects

In order to support nested queries, work items that are related to tasks are represented by proxy objects (or “ghost work items”) inside the Synergy database. A proxy object has the following attributes by default:

- `tool` (string) – the name of the change request tool. (e.g., = RTC)
- `url` (string) – the URL of the change request this object references.

  Note: If the RTC server is moved, the URLs stored in this field will need to be updated to reflect the new server location.
- `name` (string), `version` (string), type (string), `subsystem`(string) – these four attributes comprise a Synergy object’s unique four-part name.
  - Change requests are not versioned, so the value of version is always “1”.
  - The type is “_cr_”.
  - The subsystem (instance) is the name of the change request tool. (e.g., “rtc”)
  - The name is chosen to be unique for the specified change request tool. For RTC, this is “`<tool-name>_<work item number>`”, for example, rtc_123000.

For example, the four-part name of a reference to an RTC work item would be "rtc_123000:1:_cr_:rtc" (or internal notation "rtc/_cr_/rtc_123000/1").

The following additional attributes are defined for work items:

- `problem_synopsis` (string) – Short description.
- `description` (text) – Detailed description.
- `problem_number` (string) – Change request tool defined identifier.
- `crstatus` (string) – Current status in the change request tool lifecycle.
- `owner` (string) – The person responsible for the change request.
- `resolver` (string) – The person to whom the change request is assigned.
- `release` (string) – The release where the change request will be resolved. As this does not map well between Synergy and RTC, this is not set. See "`planned_for`".
- `priority` (string) – The priority of the change request as defined in the change request tool.
- `create_time` (time) – The time the change request was created.
- `planned_for` (string) – RTC specific attribute specifying the iteration where the work item will be resolved. See "`release`".
- `cr_can_associate_task` (boolean) – Can associate a task to the change-request. It defaults to TRUE, which means the task can be associated to the change request.
- `cr_can_disassociate_task` (boolean) – Can disassociate a task from the change-request. It defaults to TRUE, which means the task can be disassociated from the change request.
- `request_type` (string) – Change request type.

These values are copies of the data maintained in RTC and serve as cached values which can be used in Synergy queries.

More work item properties can be mapped to attributes in the reference object by modifying the attribute `cached_attribute_names` which exist on rtc admin object. See the section "`Configure cached attributes for proxy work items`" for configuring the cached attributes.

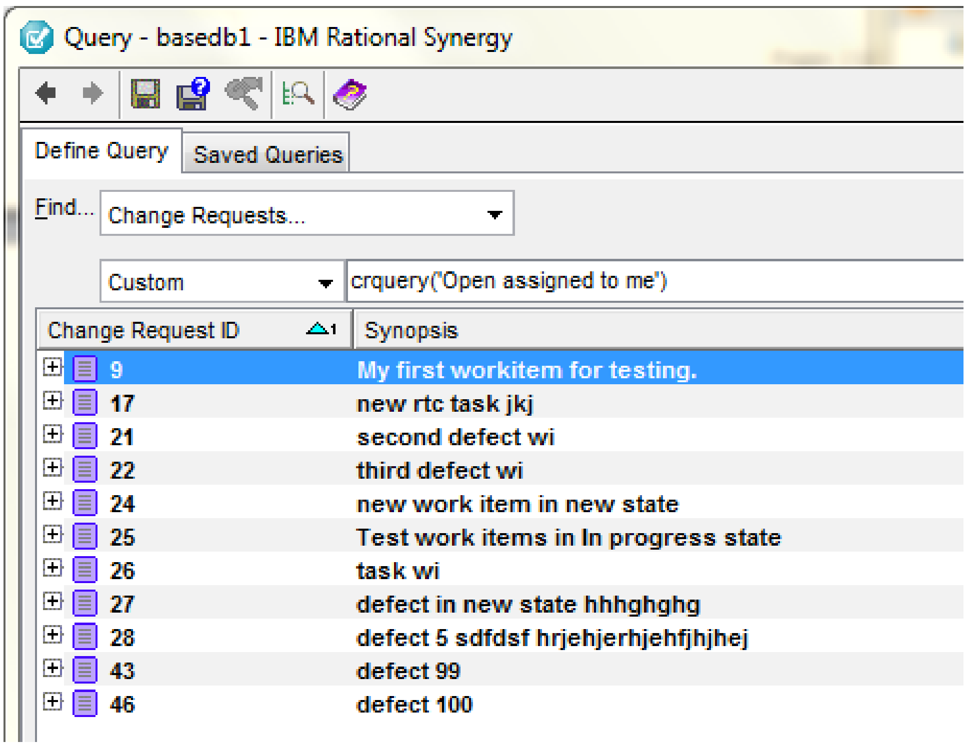
By using reference objects, the existing logic that Synergy uses for Rational Change change-requests can be leveraged. A task is associated with an RTC work item by creating a relationship from the RTC work item's reference object to the task with the name "`associated_task`" just as is done for Change change-requests, and all logic that evaluates the "associated_task" relationship functions normally.

3.5 Queries

New query functions are available to invoke a query remotely in RTC.

crquery(“<query string>**”)**

This function takes one string argument which is the name of a shared query in RTC, for example, “Open assigned to me”. The query is run remotely on RTC, and the returned results are displayed in Synergy.



Users can create saved queries in Rational Synergy for the RTC shared queries and add those saved queries to the Change Request Explorer pane on the main view. (**Note:** The query name must be an RTC shared query. User-defined RTC queries cannot be referenced.)

When the query is executed, all the work-items returned from RTC shall be displayed in Synergy, where as Synergy CLI client shall display only the work-items which has the respective proxy objects available. Queries performed in the GUI are not limited to work items with an existing reference object; this allows users to link tasks with work items not yet referenced from the Synergy database.

3.6 Policies

3.6.1 Work Item Completion requires Linked Tasks to be Complete

3.6.2 Task Completion requires Linked Work Item

Rational Synergy can be configured to allow task completion only for tasks that have an associated work item (change request) by creating an attribute named "`required_attributes`" of type `text` on the task cvtype with the value "`change_request`".

The keyword "`change_request`" is called as "pseudo attribute"; the attribute does not physically exist. When checking for required attributes, Synergy interprets the "`change_request`" keyword by asking "is this task referenced by any `has_associated_task` relationships?"

4 Configure Rational Synergy to use Rational Team Concert

4.1 Server Side Configuration

4.1.1 Change Request Tool Admin Object

Each change request tool has an admin object in Rational Synergy database that is used to configure each tool, including Rational Change. The admin object for Rational Change has the four-part name `cs:1:admin:1`. The admin object for RTC has the four-part name `rtc:1:admin:1`. The following attributes are common to all change request tool admin objects:

- pt_app (string) – Existing attribute from Change. The base URL of the change request tool. This is the URL which is invoked in a browser when the "Tools/Start IBM Rational Change or Tools/Start IBM Rational Team Concert" menu item is selected. **Note:** If the RTC or Change server is moved, this URL would need to be updated. Check Server Rename section for more information.
- `integration_enabled` (boolean) – Existing attribute from Change. TRUE when the integration is available in the Synergy GUI. When FALSE, the change request features are hidden.
- `tool_displayname` (string) – The name to be displayed for the pseudo-attribute cr_tool_displayname on reference objects for this tool, for example, "RTC". This attribute is new and does not exist for Change's admin object.

The admin object for RTC has a tool-specific attribute:

- rtc_project_area (string) – The name of the RTC project area this connection will access. Work items and saved queries that Synergy accesses belongs to this project area.

The admin object for Rational Change also has several attributes for managing all change request tools:

- `installed_tools` (string) – a list of all change request tools which have been configured for this database. The attribute value, that is the tool names shall be separated by vertical bar, "|".
- `default_tool` (string) – the name of the change request tool that is used by default for the database.

4.1.2 Server Authentication

To support Rational Synergy server's requirement to update RTC work items when the associated tasks are modified, the server needs authentication credentials for RTC. These credentials are stored in the properties file `CCM_HOME/etc/ccm.crtool.rtc.properties`. There are two user-editable keys in the properties file, `crtool.rtc.server.user` and `crtool.rtc.server.password`, which shall hold the user name and password respectively, of an RTC user who has sufficient privileges to modify Synergy task links on work items.

When the server reads the password property, it will replace with an encrypted password as a security measure. To provide additional security, you can protect the file so that only ccm_root can read (and write) it.

If the Synergy admin user name is not ccm_root, then the property `crtool.rtc.synergy.user` needs to be set to provide the user name.

4.2 Client Side Configuration

4.2.1 User Authentication

Rational Synergy client needs to access RTC on behalf of the Rational Synergy user to make work item queries. Each Synergy user will need to have a corresponding RTC user account. No assumption is made that the Synergy user name and password are the same as the RTC user name and password. The RTC tool user name and password will be read from the user client properties file, `HOME/[.]ccm.user.properties`, using the keys `crtool.rtc.user.name` and `crtool.rtc.user.password`.

When the client reads the password property, it will replace with an encrypted password as a security measure. To provide additional security, protect the file with permissions that restrict read access to other users.

All passwords are encrypted in communications between Synergy and RTC.

Note: From 7.2.1.2 release onwards, setting the client side RTC user name and password shall be done through executing the script `$CCM_HOME/bin/setup_client_rtc_user`. This script shall create a file with name `.ccmrtcuser` under the user's home directory, which stores the RTC user name and password. The password shall be stored in encrypted format.

5 Administration

5.1 Restrict which work item types can link to tasks

Users can configure which work item types can be linked to Synergy tasks. By default, all the work item types can be linked to Synergy tasks. This can be changed to allow only certain work item types to be linked to Synergy tasks by editing the text attribute `rtc_allowed_wi_types_to_link` which exists on rtc admin object, that is `rtc:1:admin:1`.

The identifiers of the work item types should be set as the attribute value.

For example, if Synergy tasks need to be linked only to work items of type "Story" or "Enhancement" or "Defect", then the value of this attribute should be as follows

```
>ccm attr -s rtc_allowed_wi_types_to_link rtc:1:admin:1
com.ibm.team.workitem.workitemType
com.ibm.team.workitem.workitemType.story
com.ibm.team.workitem.workitemType.enhancement
```

5.2 Restrict which work item states can link to tasks

Users can configure which work item states can be linked to Synergy tasks. By default, all the work item states can be linked to Synergy tasks. This can be changed to allow only certain work item states to be linked to Synergy tasks by editing the text attribute `rtc_allowed_wi_states_to_link` which exists on rtc admin object, that is `rtc:1:admin:1`.

For example, if Synergy tasks need to be linked only to work items in the states "In Progress" or "Reopened", then the value of this attribute should be as follows

```
>ccm attr -s rtc_allowed_wi_states_to_link rtc:1:admin:1
In Progress
Reopened
```

5.3 Configure cached attributes for proxy work items

Users can configure a list of attributes that needs to be synchronized from RTC work item to Synergy proxy work-items. This can be achieved by updating the `cached_attribute_names` attribute value on the RTC admin object in the following format:

`<rtc_attribute_id>[:<synergy_attribute_name>]`

- **`<rtc_attribute_id>`**, is the attribute identifier on Rational Team Concert work item.

- **`<synergy_attribute_name>`**, is the attribute name which gets created on Synergy proxy object. Providing Synergy attribute name is optional and if omitted then RTC work item attribute identifier shall be used as Synergy attribute name for the proxy object.

By default `cached_attribute_names` attribute value shall be empty, which means only the default set of attributes shall be created on Synergy proxy objects.

Refer to the section "Proxy Objects" for the default set of attributes created on Synergy proxy objects.

Each line in `cached_attribute_names` attribute value shall be treated as a separate attribute mapping entry and a respective attribute shall be created on the proxy object if the respective attribute is available on the RTC work item.

5.4 Server Rename

If the RTC server is relocated then all the references to this URL on the proxy objects in Synergy should be updated. This can be done by using the `ccm update_urls` CLI command.

```
ccm update_urls /rtc /old_url old_server_url /new_url new_server_url
attribute_name...
```

Synergy CLI should be started in single user admin mode and the role should be set to ccm_admin to execute this command.

6 Client Features

6.1 User Configurable Change Request Tool

By default the active change request tool is set for the entire Synergy database using the attribute `default_tool` which exists on Rational Change admin object, but this can be configured at the user level as well.

The following property in the user's property file `HOME/[.]ccm.users.properties`, allows a user to specify which change request tool to use for a specific database. `crtool.user.tool.<db name>=<tool name>`

This would force the Synergy client to use the user specified tool when using that database regardless of the default tool set on the database.

The tool name to be used for Rational Change is "`cs`" and for RTC it is "`rtc`".

For example:

If the database path is `\\loon\ccmdb\prod_db`, and the user wants to use Rational Change as change tool, then user needs to add the following entry in `HOME/[.]ccm.user.properties` file.

```
crtool.user.tool.prod_db=cs
```

6.2 Synergy CLI Client support for RTC

Rational Synergy CLI client shall support RTC work-items in the same way as Rational Change change-requests for all the supported commands. Only pre-requisite is, there should be a proxy object available in the database to perform the required operation.

7 Limitations and Known Problems

- Only RTC shared queries can be used from Rational Synergy, user queries are not supported.

8 Contacting IBM Rational Software Support

If the self-help resources have not provided a resolution to your problem, contact IBM® Rational® Software Support for assistance in resolving product issues.

Note: If you are a heritage Telelogic customer, a single reference site for all support resources is located at http://www.ibm.com/software/rational/support/telelogic/

8.1 Prerequisites

To submit your problem to IBM Rational Software Support, you must have an active Passport Advantage® software maintenance agreement. Passport Advantage is the IBM comprehensive software licensing and software maintenance (product upgrades and technical support) offering. You can enroll online in Passport Advantage from http://www.ibm.com/software/lotus/passportadvantage/howtoenroll.html

- To learn more about Passport Advantage, visit the Passport Advantage FAQs at http://www.ibm.com/software/lotus/passportadvantage/brochures_faqs_quickguides.html.
- For further assistance, contact your IBM representative.

To submit your problem online (from the IBM Web site) to IBM Rational Software Support, you must additionally:

- Be a registered user on the IBM Rational Software Support Web site. For details about registering, go to http://www.ibm.com/software/support/.
- Be listed as an authorized caller in the service request tool.

8.2 Submitting problems

To submit your problem to IBM Rational Software Support:

1. Determine the business impact of your problem. When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem that you are reporting.

   Use the following table to determine the severity level.

Severity	Description
1	The problem has a *critical* business impact: You are unable to use the program, resulting in a critical impact on operations. This

	condition requires an immediate solution.
2	This problem has a *significant* business impact: The program is usable, but it is severely limited.
3	The problem has *some* business impact: The program is usable, but less significant features (not critical to operations) are unavailable.
4	The problem has *minimal* business impact: The problem causes little impact on operations or a reasonable circumvention to the problem was implemented.

2. Describe your problem and gather background information. When describing a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Rational Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:
   - What software versions were you running when the problem occurred?
     To determine the exact product name and version, use the option applicable to you:
     - Start the IBM Installation Manager and select **File** > **View Installed Packages**. Expand a package group and select a package to see the package name and version number.
     - Start your product, and click **Help** > **About** to see the offering name and version number.
   - What is your operating system and version number (including any service packs or patches)?
   - Do you have logs, traces, and messages that are related to the problem symptoms?
   - Can you recreate the problem? If so, what steps do you perform to recreate the problem?
   - Did you make any changes to the system? For example, did you make changes to the hardware, operating system, networking software, or other system components?
   - Are you currently using a workaround for the problem? If so, be prepared to describe the workaround when you report the problem.
3. Submit your problem to IBM Rational Software Support. You can submit your problem to IBM Rational Software Support in the following ways:
   - **Online**: Go to the IBM Rational Software Support Web site at https://www.ibm.com/software/rational/support/ and in the Rational support task navigator, click **Open Service Request**. Select the electronic problem reporting tool, and open a Problem Management Record (PMR), describing the problem accurately in your own words.

     For more information about opening a service request, go to http://www.ibm.com/software/support/help.html

     you can also open an online service request using the IBM Support Assistant. For more information, go to http://www.ibm.com/software/support/isa/faq.html.

   - **By phone:** For the phone number to call in your country or region, go to the IBM directory of worldwide contacts at http://www.ibm.com/planetwide/ and click the name of your country or geographic region.

   - **Through your IBM Representative:** If you cannot access IBM Rational Software Support online or by phone, contact your IBM Representative. If necessary, your IBM Representative can open a service request for you. You can find complete contact information for each country at http://www.ibm.com/planetwide/.

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